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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
LIU, SAMUEL W	

ART UNIT	PAPER NUMBER
1653	

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DATE MAILED: 01/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/719,755	NANDABALAN ET AL.	
	Examiner	Art Unit	
	Samuel W Liu	1653	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-65 is/are pending in the application.

4a) Of the above claim(s) none is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) 1-65 are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

The following Office action is applicable to the pending claims 1-65.

Election/Restrictions

Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group 1, claims 1-7, 17-21 and 30, drawn to a purified complex of p27(Kip1)·FKBP-12 and pharmaceutical composition and kit comprising the complex thereof.

Group 2, claims 8-9, 22-23 and 30, drawn to an antibody recognizing the complex of p27(Kip1)·FKBP-12 and pharmaceutical composition comprising the complex thereof.

Group 3, claims 10-16, 24-28 and 30, drawn to an "isolated polynucleotide comprising a nucleotide sequence encoding p27(Kip1) and a nucleotide sequence encoding FKBP-12.

Group 4, claim 29, drawn to a method of diagnosing presence of developing a disease state characterized by an aberrant level of a complex p27(Kip1)·FKBP-12 comprising measuring level or activity of the complex.

Group 5, claims 31-33, drawn to a method of treating a disease state involving aberrant levels of a complex p27(Kip1)·FKBP-12 comprising administering to a subject a molecule that modulates function of the complex.

Group 6, claims 34-36, drawn to a method of treating a disease state involving aberrant level of FKBP-12 comprising administering to a subject a molecule that modulates function of FKBP-12 polypeptide.

Group 7, claims 37-39, drawn to a method of treating a disease state involving aberrant level of p27(Kip1) comprising administering to a subject a molecule that modulates function of p27(Kip1) polypeptide.

Group 8, claims 40-42, drawn to a method of screening a composition for a disease state comprising contacting cultured cells that exhibits an indicator of a disease state atherosclerosis (claim 40), or autoimmune disease (claim 41), or neurodegenerative disease (claim 42) *in vitro* with the complex p27(Kip1)·FKBP-12 or with modulator of the activity of the complex thereof, and comparing the level of said indicator in the cells with the level of said indicator in cells not so contacted. Note that the altered level of the complex correlates to the said disease state, and said composition is the complex p27(Kip1)·FKBP-12 per se or a modulator that regulates activity of said complex.

Group 9, claim 43, drawn to a method of screening a composition or a modulator for treating cancer comprising measuring the survival of cells from a cell line displaying malignant disorder and comparing the survival cells that contact with the complex p27(Kip1)·FKBP-12 with survival cells not so contacted. Note that the lowered level of the complex indicates the complex or the modulator of the activity of the complex has anti-cancer activity.

Group 10, claim 44, drawn to a method of screening a composition for treating tumor comprising administering to a test animal the complex p27(Kip1)·FKBP-12 or modulator of activity of the complex thereof, and measuring tumor growth in said animal.

Group11, claim 45, drawn to a method of screening a composition or a modulator for treating membrane nephropathy comprising contacting cultured cells that exhibit an indicator of membrane nephropathy disorder in vitro, and comparing the level of said indicator in the cells with the level of said indicator in cells not so contacted. Note that the altered level of said indicator indicates the complex or the modulator of activity of the complex has activity in treating said disorder state.

Group 12, claim 46, drawn to a method of screening a composition for treating viral infection comprising administering to a test animal the complex p27(Kip1)·FKBP-12 or modulator of activity of the complex thereof, and measuring the change in viral infection symptoms.

Group 13, claim 47, drawn to a method of screening a molecule that modulates formation of a complex p27(Kip1)·FKBP-12 comprising measuring the level of the formed complex, and comparing the level of formed complex with the level of said complex in the absence of said molecule.

Group 14, claims 48-50, drawn to a transgenic non-human animal comprising *p27(Kip1)* gene and *FKBP-12* gene.

Group 15, claim 51, drawn to a method of modulating activity or level of p27(Kip1) comprising administering an animal expressing a gene product (a FKBP-12 protein, or polynucleotide encoding FKBP-12 protein, or an antibody against FKBP-12 protein).

Group 16, claim 52, drawn to a method of modulating activity or level of FKBP-12 comprising administering an animal expressing a gene product (a p27(Kip1) protein, or polynucleotide encoding p27(Kip1) protein, or an antibody against p27(Kip1) protein).

Group 17, claim 53, drawn to a method of modulating activity or level of a complex p27(Kip1)·FKBP-12 comprising administering a cell or an animal a molecule that regulates the complex thereof.

Group 18, claims 54-56, drawn to a method of identifying a molecule that regulates activity of the polypeptide composition p27(Kip1) or FKBP-12, or a complex of p27(Kip1)·FKBP-12, and measuring the amount of formed complex between p27(Kip1) and FKBP-12.

Group 19, claim 57, drawn to a method of screening an analog of p27(Kip1) polypeptide for biological activity comprising contacting said analog with FKBP-12 polypeptide and detecting formation a complex between the two polypeptides thereof.

Group 20, claim 58, drawn to a method of screening an analog of FKBP-12 polypeptide for biological activity comprising contacting said analog with p27(Kip1) polypeptide and detecting formation a complex between the two polypeptides thereof.

Group 21, claim 59, drawn to a method of monitoring the efficacy of treating a disease state characterized by an aberrant level of the complex p27(Kip1)·FKBP-12 in a subject which ahs been administered said treatment of the disease state comprising (i) measuring

the level of the composition (the p27(Kip1)·FKBP-12) polypeptide complex, or measuring level of RNA encoding p27(Kip1) and FKBP-12), or measuring activity of said complex in a sample from said subject; and (ii) comparing to said level in a sample taken from said subject prior to the administration of the treatment or comparing to a standard level associated with the pretreatment stage of the disease state.

Group 22, claims 60-65, drawn to a method of treating autoimmune disease (including atherosclerosis) comprising administering to a subject a molecule that modulates activity of a complex p27(Kip1)·FKBP-12.

Group 23, claim 62, drawn to a method of treating neurodegenerative disease comprising administering to a subject a molecule that modulates activity of a complex p27(Kip1)·FKBP-12.

Group 24, claim 63, drawn to a method of treating hyperproliferative disorder comprising administering to a subject a molecule that modulates activity of a complex p27(Kip1)·FKBP-12.

Group 25, claim 64, drawn to a method of treating membrane nephropathy comprising administering to a subject a molecule that modulates activity of a complex p27(Kip1)·FKBP-12.

Group 26, claim 65, drawn to a method of treating viral infection or viral infection associated disease state comprising administering to a subject a molecule that modulates activity of a complex p27(Kip1)·FKBP-12.

Additional Election

Regardless of the elected group, applicant is required under 35 US 121 (1) to elect a single disclosed peptide to which claims are restricted; and (2) to list all claims readable thereon including those subsequently added.

If Group 1 or 2 or 3 is elected, applicant is required to elect a polypeptide, or an antibody or a polynucleotide from claim 30, respectively.

If Group 4 is elected, applicant is required to elect measuring level or measuring activity of the complex p27(Kip1)·FKBP-12.

If Group 5 is elected, applicant is required to elect said molecule: the complex of polypeptide, or polynucleotide, or FKBP-12 antisense polynucleotide from claim 32 or/and claim 33.

If Group 6 is elected, applicant is required to elect said molecule: the FKBP12 polypeptide (from claim 35), or an antibody against the polypeptide thereof (from claim 36), or FKBP-12 antisense polynucleotide (from claim 36), or polynucleotide comprising FKBP-12 gene or a portion of FKBP-12 gene (from claims 35-36).

If Group 7 is elected, applicant is required to elect said molecule: p27(Kip) polypeptide (from claim 38), or an antibody against the polypeptide thereof (from claim 39), p27(Kip) antisense polynucleotide (from claim 39), or polynucleotide p27(Kip) gene or a portion of p27(Kip) gene (from claims 38-39).

If Group 8 is elected, applicant is required to elect (i) a subject matter (said composition) to be screened: the complex p27(Kip)·FKBP-12, or a modulator for modulating activity of the complex thereof (from claim 40 or 41 or 42); and (ii) a disease state atherosclerosis from claim 40, or autoimmune disease from claim 41, or neurodegenerative disease from claim 42.

If Group 9 or 10 or 11 or 12 is elected, applicant is required to elect a composition to be screened: the complex p27(Kip)·FKBP-12, or a modulator for modulating activity of the complex thereof.

If Group 15 or 16 is elected, applicant is required to elect (i) an expressed gene product: a FKBP-12 protein, or polynucleotide encoding FKBP-12 protein, or an antibody against FKBP-12 protein; and (ii) the object that is modulated, i.e., activity, or level of p27(Kip1) or FKBP-12 from claims 51 and 52.

If Group 17 is elected, applicant is required to elect (i) the subject to be administered: a cell or an animal; and (ii) the object that is modulated, i.e., activity, or level of the complex p27(Kip)·FKBP-12 from claim 53.

If Group 18 is elected, applicant is required to elect a polypeptide composition: p27(Kip1) or FKBP-12, or a complex of p27(Kip1)·FKBP-12, which is subject to the modulation by the said molecule.

If Group 21 is elected, applicant is required to elect (i) a particular measuring step: measuring the level of *the composition* or measuring activity of said complex in a sample from said subject; and (ii) a comparing step: comparing to said level in a sample of a subject prior to administration, o comparing to a standard level associated with the pretreatment stage of the disease state wherein change in the p27(Kip1))·FKBP-12 complex level or the RNA level or the activity of said complex in said sample taken after the administration of said treatment relative to the sample taken before the administration thereof is indicative of treating said disease state.

The response to the election requirement should also identify the claims readable thereon as directed to the elected invention.

Because these inventions are distinct for art recognized divergent subject matter, separate search, restriction for examination purposes as indicated is proper.

The invention listed as Groups 1-26 do not related to a single general invention concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack he same or corresponding special technical features for the following reasons:

The composition claim 8 is taught by Luo, Y. et al. (*Mol. Cell. Biol.* (1996) 16, 6744-6751). Prior to the effective filing date of the instant application, Luo *et al.* teach an antibody that immunospecifically binds p27(Kip1) polypeptide (see abstract, Figure 3, and "Materials and Methods" section). Thus, the claimed invention does not constitute a special technical feature linking all claims, as defined by PCT Rule 13.2 and 37 CFR 1.475(a), as a single contribution over the art, and a holding of lack of unity is therefore proper.

Applicants are advised that reply to this requirement to be complete must include an election and an additional election set forth *supra* of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the

application. Any amendment of inventorship must be accompanied by a request under37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel Wei Liu, Ph.D. whose telephone number is 703-306-3483. The examiner can normally be reached Monday-Friday 9:00 -5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Christopher Low can be reached on (703) 308-2923. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-4242 for regular communication and (703) 305-3014 for the after final communication. Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center 1600 receptionist whose telephone number is (703) 308-0196.

Samuel Wei Liu, Ph.D.
January 5, 2003

ROBERT A. WAX
PRIMARY EXAMINER